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Gribaldo, Jacobs, Jones and Associates

SAN TOMAS CREEK
Santa Clara, California

SOIL INVESTIGATION

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Report
to
Santa Clara County Flood Control
and
Water District

San Tomas Creek Between El Camino and Southern Pacific Railroad
Santa Clara, California
SOIL INVESTIGATION

by
GRIBALDO, JACOBS, JONES AND ASSOCIATES
333 Fairchild Drive
Mountain View, California

July, 1967

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San Francisco / Oakland / Watsonville

File No. E6584-M1
July 28, 1967

Santa Clara County Flood Control
and Water District
70 West Hedding Street
San Jose, California

Attention: Mr. Jeremy Wire
Subject: San Tomas Creek Between El Camino and
Southern Pacific Railroad
Santa Clara, California
SOIL INVESTIGATION

Gentlemen:

As authorized by your work authorization order, Charge No. 2-18-20, we have performed the requested items of work on the subject project. The results of our field investigation and laboratory test program are included herein.

On July 3, 1967, we made two 19 foot deep test borings at the locations specified by Mr. Jeremy Wire of your office, who was at the site during the time that the borings were made. The test borings were logged by a supervising soils engineer and representative samples of the disturbed soil from the test borings were retained for use in the laboratory testing program. In addition to the disturbed samples, relatively undisturbed samples were obtained from selected depths to complete the sampling program. These were sealed at the job site and returned to the laboratory for testing.

The logs of borings (Figures No. 1 and No. 2) disclose a soil profile similar in nature at both locations. The entire section is clayey with varying amounts of silt and sand. Silty clay is the predominant soil type ranging in consistency from slightly moist and stiff to very moist and soft. Small amounts of fine gravel were interspersed through some of the slightly granular zones and a small amount of free subsurface water was encountered in each boring at the depths noted on the logs of test borings.

In the laboratory, the in-place moisture content and dry density of the undisturbed samples were determined. In addition, two samples were selected for direct shear testing. These were allowed to absorb water freely for 24 hours, drained briefly and then sheared by the "quick loading" direct shear method.

Disturbed samples from the borings were tested to determine gradation and Atterburg Limits. A sieve analysis was performed on a sample of material from the existing channel bottom taken from a point just below the confluence of the two channels. The results of our investigation, including logs of test borings and laboratory test data are presented in TABLES I and II and on Figures No. 1 through No. 7.

If there are any questions or if you require additional information, please contact us at any time.

Yours very truly,

GRIBALDO, JACOBS, JONES AND ASSOCIATES

Ben A. Patterson

Ben A. Patterson

Albert C. Gribaldo /cwo

Albert C. Gribaldo, P.E.

BAP:ACG:p

Copies: 4 to Santa Clara County Flood Control
and Water District

TABLE I

Summary of Moisture, Density, Swell and Direct Shear Testing

Sample	Depth	In-Place Conditions		Swell Index	Direct Shear Testing	
		Moisture Content	Dry Density	% Swell % Moisture Increase	Angle of Internal Friction	Unit Cohesion
No.	ft.	% dry wt.	p.c.f.		degrees	p.s.f.
1-1	7	20.8	105.2			
1-2	9	26.1	98.1			
1-3	11	21.3	107.7			
1-4	14	20.0	108.0	0.7	32	1100
2-1	8	28.3	94.2			
2-2	10	24.9	98.0	0.6	21.5	1000
2-3	12	19.5	110.2			
2-4	14	24.1	102.0			

TABLE II

Summary of Hydrometer and Atterberg Limits Test Results

Sample	Depth	Atterberg Limits		Hydrometer Analysis			
		Liquid Limit %	Plasticity Index	Gravel %	Sand %	Silt %	Clay %
Boring #1	2' - 4'	50.0	32				
Boring #1	10' -13'			Trace	22	40	38
Boring #2	4' - 7'	37.5	18				
Boring #2	11' - 13'			Trace	25	38	37
Channel Bottom				54	46	Trace	0

File No. E6584-M1
July 28, 1967

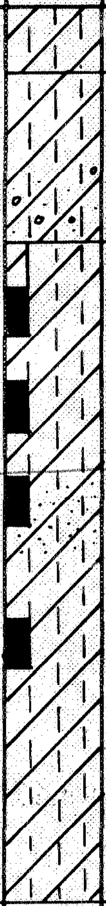
DEPTH IN FEET	SAMPLE NO	LOG & LOCATION OF SAMPLE	DESCRIPTION 5' East of San Tomas Creek channel and 400'-500' north of Monroe Street	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
0			mixture of brown silty clay and clay-silt very slightly moist, medium firm.		
2			Silty CLAY, black, moist, stiff		
4			Traces of sand and gravel		
6	1-1		Silty CLAY brown, moist, medium stiff with traces of coarse sand	105.2	20.8
8	1-2		becoming slightly more granular very moist, soft	98.1	26.1
10	1-3		Sandy zone	107.7	21.3
12					
14	1-4			108.0	20.0
16			becoming olive brown in color ▼		
18			thin sand lense with free water-wet below		
			Boring Terminated at 19 Feet		

Figure No. 1 - Log of Test Broing No. 1

File No. E6584-M1
July 28, 1967

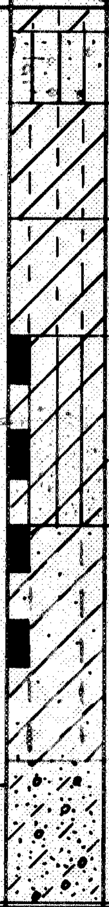
DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	DESCRIPTION 20' East of San Tomas Creek Channel and 300'-400' South of Monroe Street	IN-PLACE	
				DRY DENSITY p.c.f.	MOISTURE CONTENT % dry wt.
0			Silty Clay Black, dry hard fine gravel		
2			Silty CLAY, dark gray, moist, medium stiff		
4					
6			Clay SILT, with some sand light gray calcareous, moist, medium firm		
8	2-1 15-18		Silty CLAY, dark gray stiff, moist	94.2	28.3
			becoming sandy, calcareous, soft		
10	2-2			98.0	24.9
12	2-3		Silty CLAY with traces of sand moist, medium soft, light gray	110.2	19.5
14	2-4		becoming light brown, very moist, soft	102.0	24.1
16	∇		Clayey SAND with fine gravel, light brown, moist, medium soft		
18					
			Boring Terminated at 19 Feet		

Figure No. 2 - Log of Test Boring No. 2

DESCRIPTION: BROWN SILTY CLAY - Hole #1, 10-13'

COMMENTS

GRAVEL	Trace %
SAND	22 %
SILT	40 %
CLAY	38 %

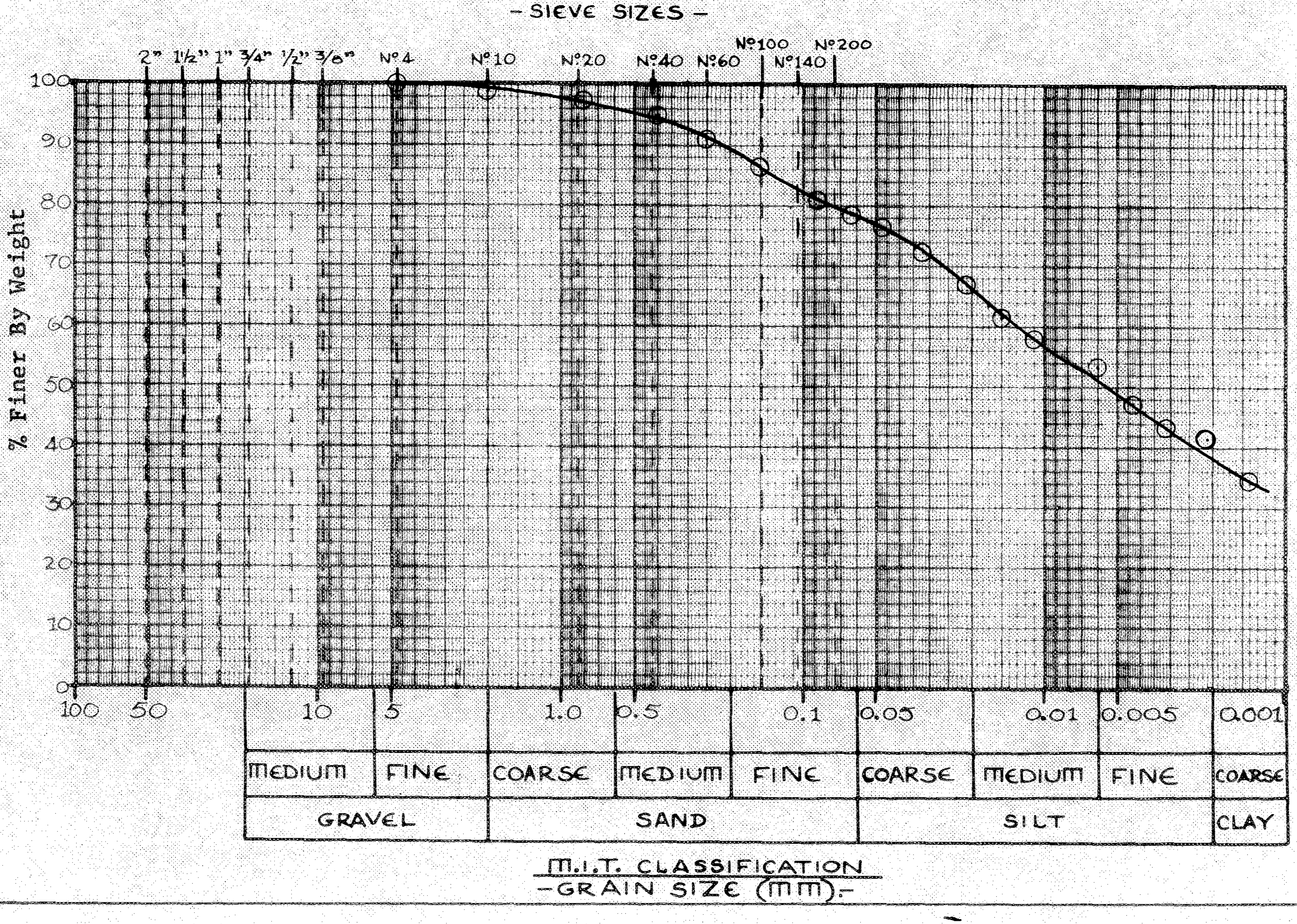


Figure No. 3 - Gradation Curve from Long Hydrometer Analysis

File No. EDJ04-
July 28, 1967

DESCRIPTION: BROWN SILTY CLAY - Hole #2, 11-13'

COMMENTS

GRAVEL	Trace %
SAND	25 %
SILT	38 %
CLAY	37 %

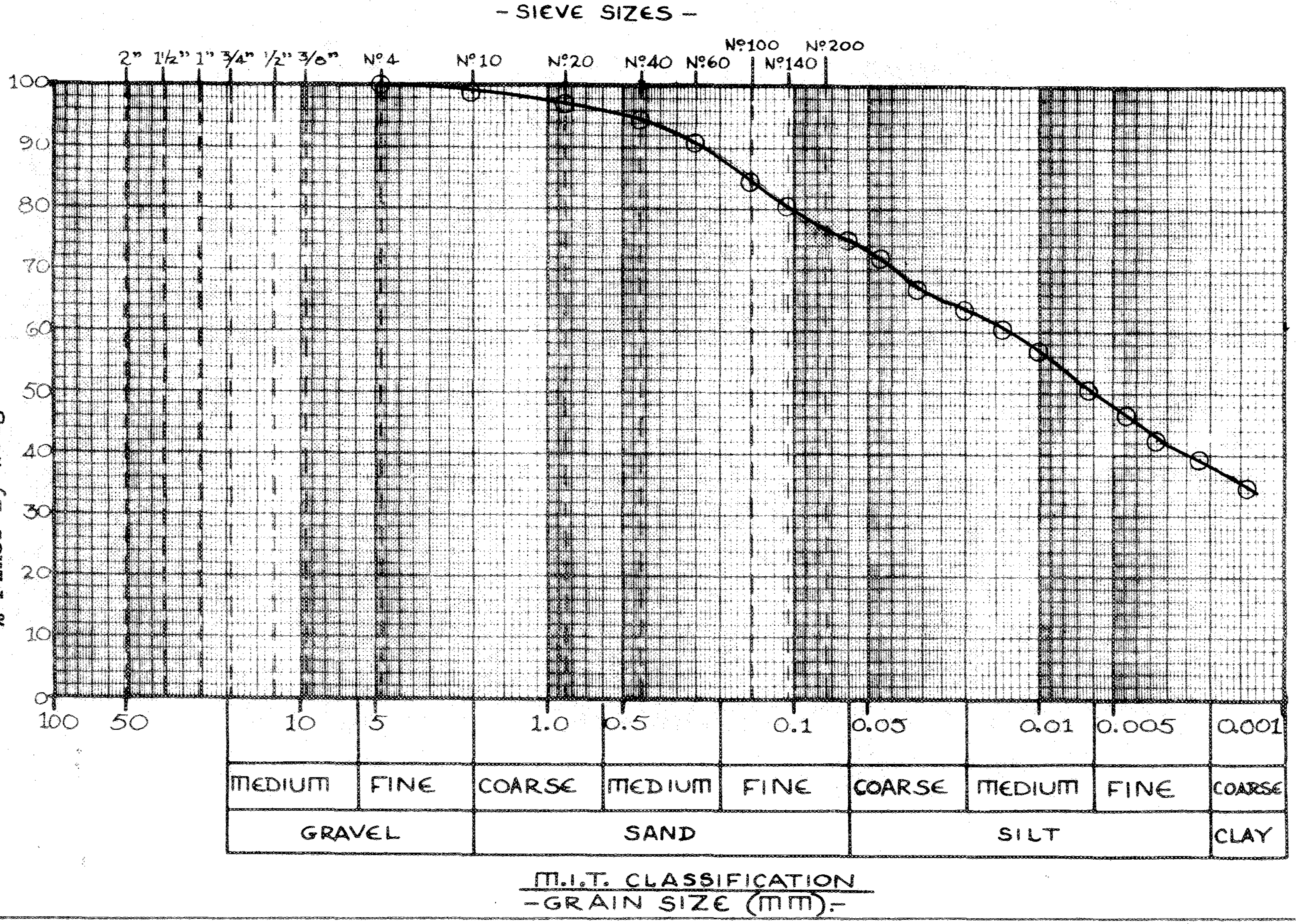
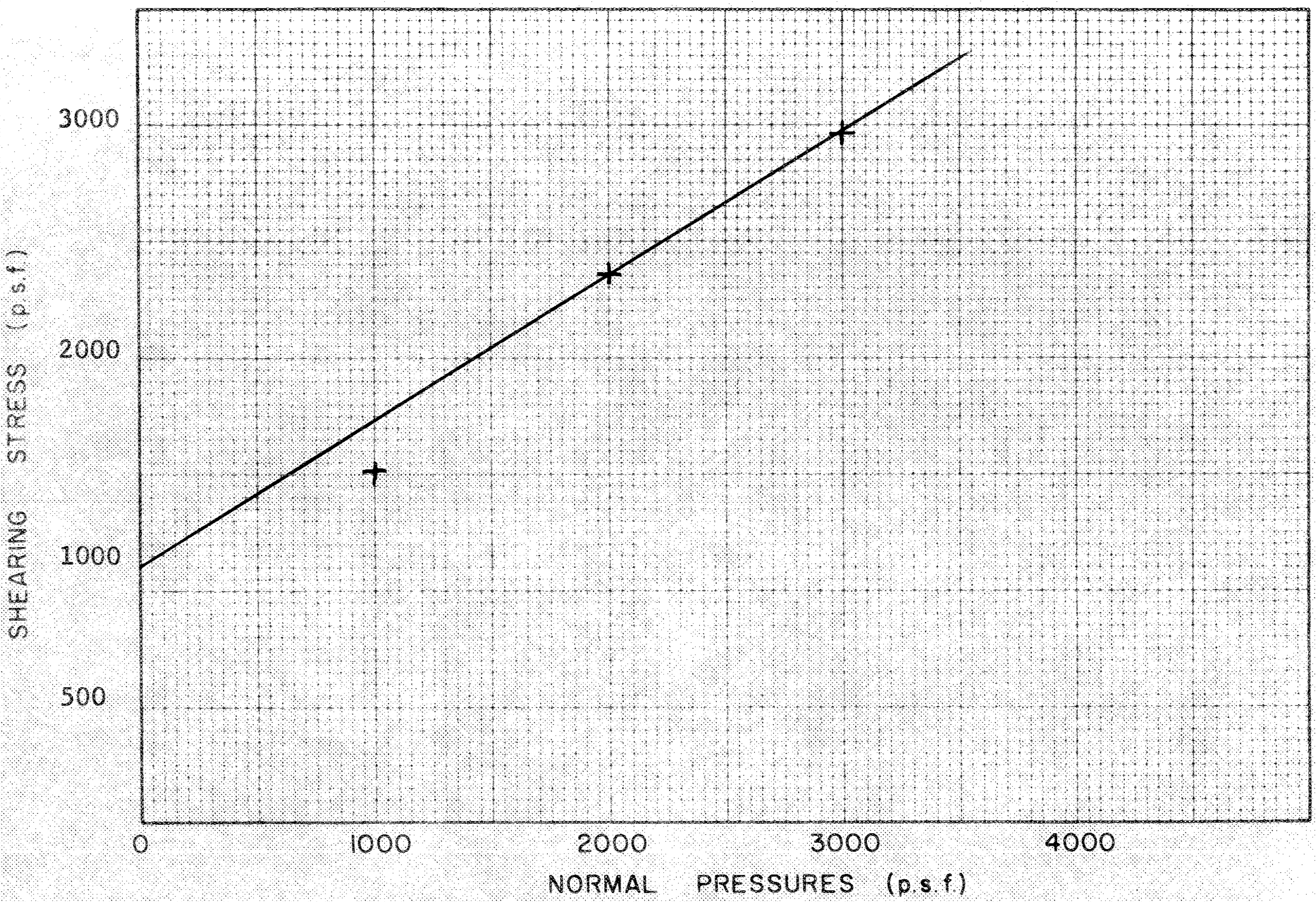


Figure No. 4 - Gradation Curve from Long Hydrometer Analysis

DIRECT SHEAR TEST



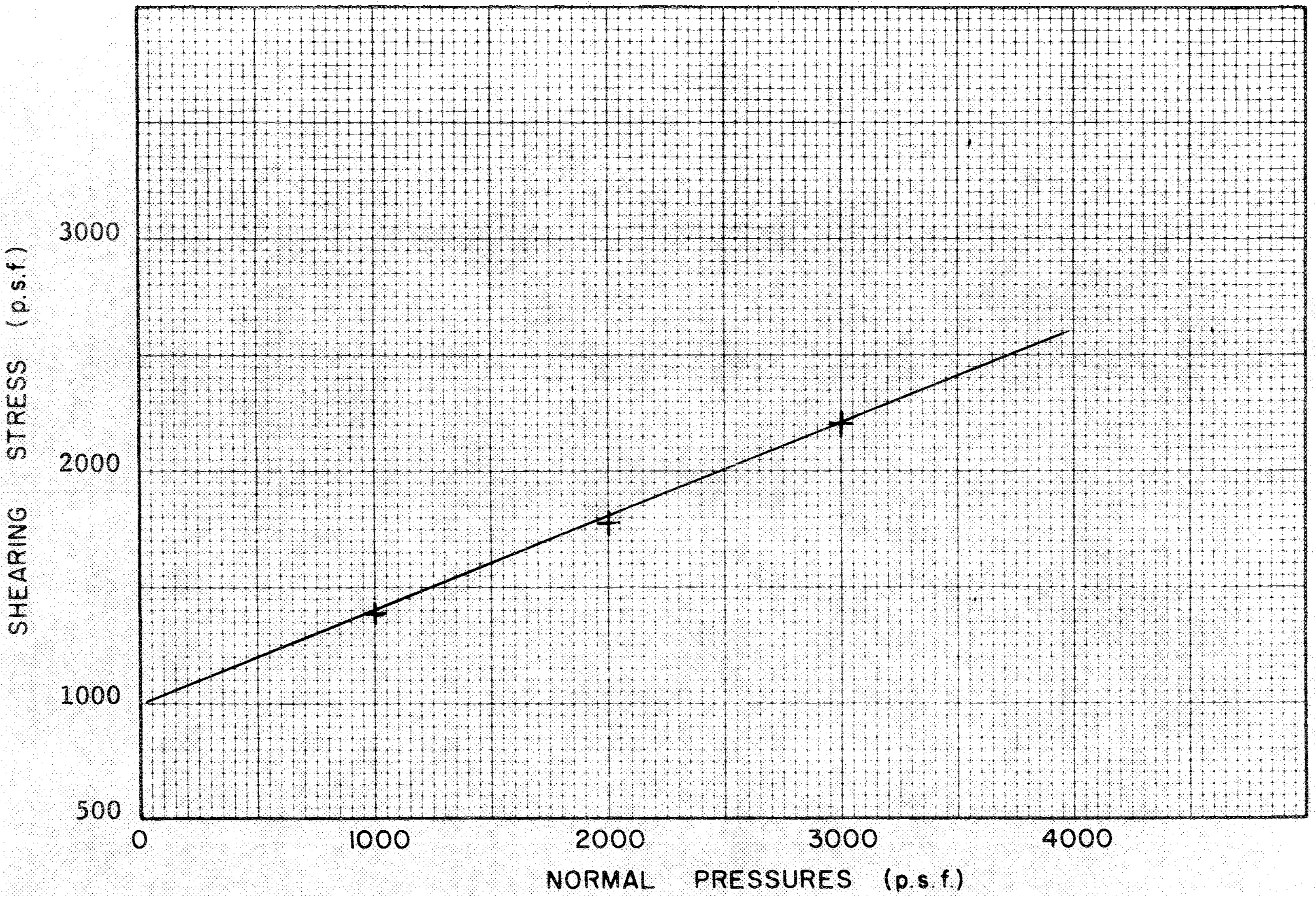
REMARKS: Sample # 1-4 gray-tan mottled
Silty Clay

C = 1100 p.s.f.
Ø = 32 °

Figure No. 5 - Direct Shear Plot

File No. E0384-M1
July 28, 1967

DIRECT SHEAR TEST



REMARKS: Sample #2-2 dark gray silty clay

C = 1000 p.s.f.

Ø = 21½ °

Figure No. 6 - Direct Shear Plot

File No. E6584-M1
July 28, 1967

DESCRIPTION: SANDY GRAVEL

COMMENTS Sample taken from channel bottom just below confluence

GRAVEL	54 %
SAND	46 %
SILT	Trace %
CLAY	0 %

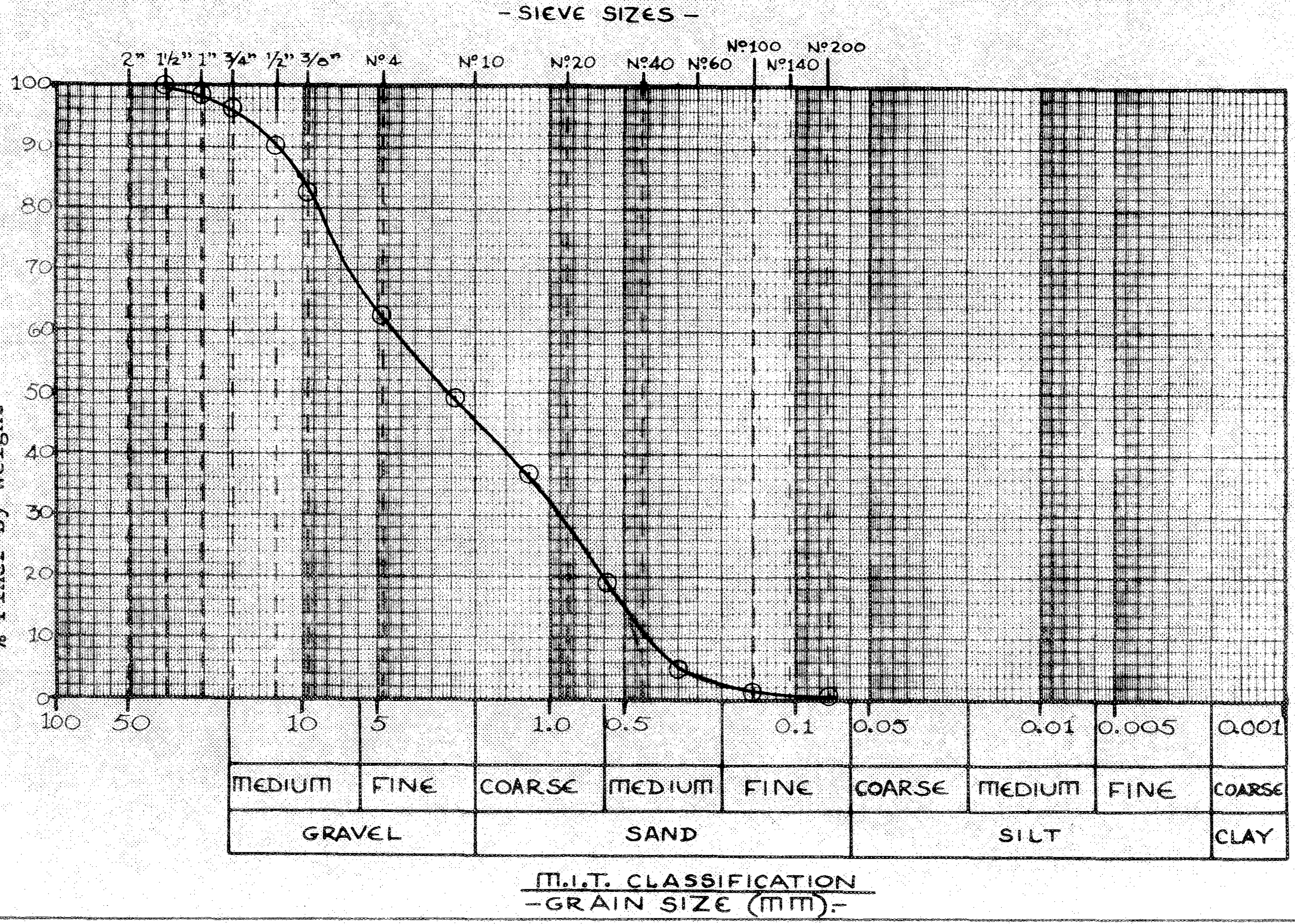


Figure No. 7 - Gradation Curve from Seive Analysis